

*IBM Network Station Family of Thin Clients*  
*Access for today, flexibility for tomorrow*



# Netscape Communicator 4.5 for Network Station Manager V2R1



**September 1, 1999**

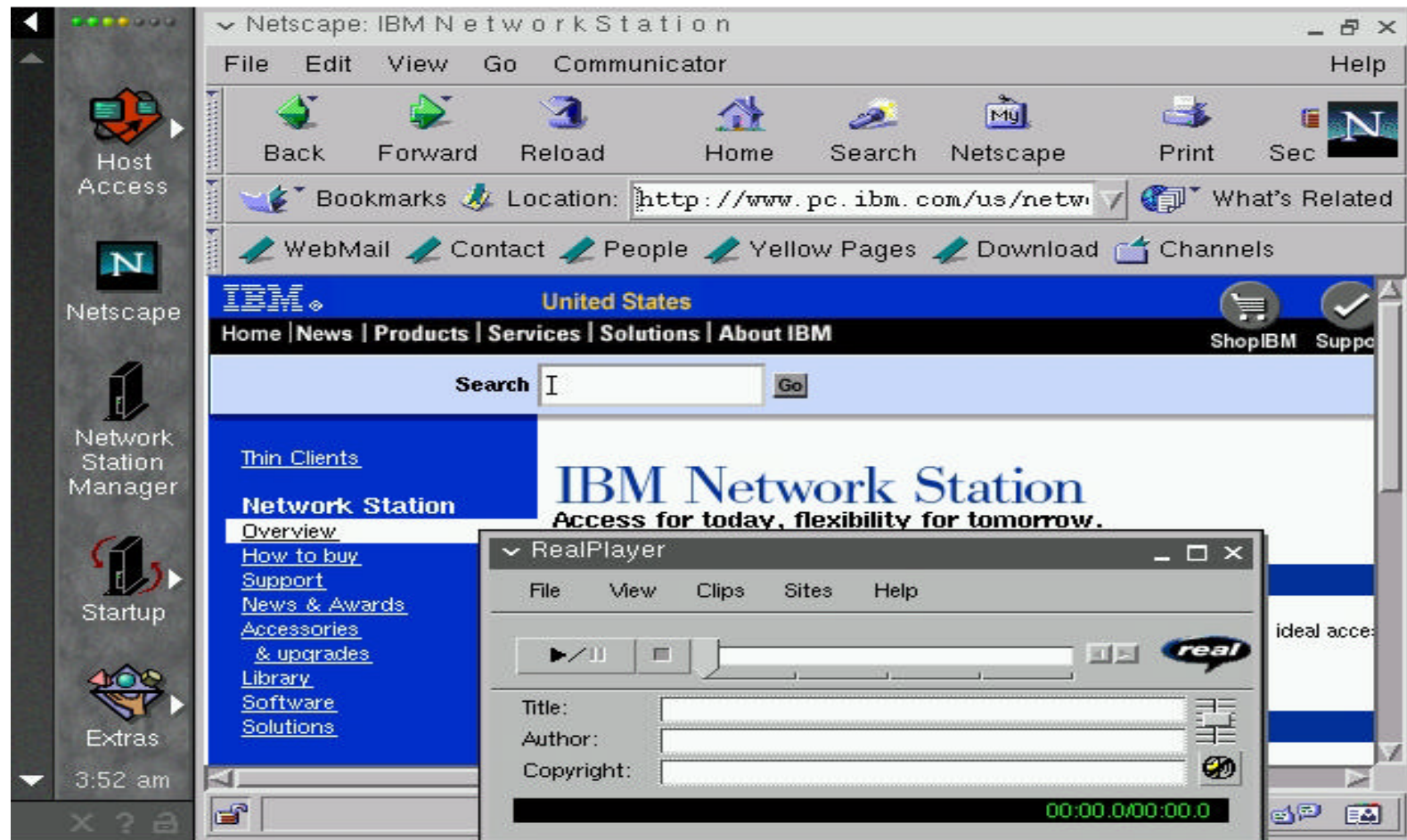




# Netscape Communicator 4.5

Provides the full "Netscape Experience"

- The browser suite on the IBM Network Station is a ported and customized version of the actual Netscape product





# Browser Currency

So what's the "bottom line" for V2R1?

- **Communicator 4.5 supports Netscape's current levels of HTML, JavaScript, and Java**
  - ▶ **Functionally, our product can do all current base function.**
  - ▶ **Ported from Solaris X86 codebase - not Microsoft Windows**
- **Is 4.5 the latest version of Netscape Communicator?**
  - ▶ **No. Netscape also released versions 4.51, 4.6, 4.61, is working on 4.7.**
- **Later releases of Communicator are mostly bug fixes**
  - ▶ **IBM will provide fixes via PTF or updated browser.**
  - ▶ **4.51 - contains Significant security fixes**
    - **Guninski Privacy bug & Window Spoofing Bug**
    - **Cookie Monster**
    - **MIME Buffer Overflow**
  - ▶ **Security issues are addressed in NetworkStation Netscape 4.5**
  - ▶ **4.6 - 56-bit DES ciphers, G2 Player (Windows)**
  - ▶ **4.61 - Liveconnect bug in accessing Netscape Admin Server**



# What's New?

Get everything from NC Navigator 3.04, plus:

- **Communicator 4.5**
  - ▶ Netscape's *latest* level of support for HTML, JavaScript, Java, e-mail
- **Full Netscape JVM compatibility, with options**
  - ▶ Netscape Security, https, Liveconnect; but, can also use external JVM
- **Plug-ins and helper applications**
  - ▶ preconfigured audio, video, streaming media and document formats
- **General Application launcher**
  - ▶ Browser can be the desktop -- web pages can launch all local apps
- **Improved e-mail**
  - ▶ Can be formatted in HTML, and accessed from an IMAP server
- **LDAP for Address Book**
  - ▶ Allows connection to a centralized corporate address book
- **More translations and code pages**
  - ▶ Use browser in more countries, and view content in more encodings
  - ▶ includes translations for locales {de, en, es, fr, it, nl, pt\_br}



# Comparison by Release

The new product has many new capabilities

## **NC Navigator 3.04** vs. **Netscape Communicator 4.5**

### **Browser**

- HTML "3.2"
- JavaScript 1.1
- GIF and JPEG images

### **e-mail and news**

- SMTP and POP3
- NNTP

### **Plug-ins and helper apps**

- Not supported

### **Java**

- External JVM 1.1.4 only

### **Navigator browser**

- Dynamic HTML (DHTML)
- JavaScript 1.3 ECMA-252 compliant
- GIF, JPEG, & PNG images

### **Messenger e-mail and news**

- SMTP, POP3, & IMAP4
- NNTP, with SSL
- LDAP directory access
- HTML formatting

### **Plug-ins and helper apps** - *now supported*

- PDF 1.2 (Acrobat 3 level)
- RealPlayer 5.0 (streaming audio & video)
- audio and video  
au , wav, aiff, avi, mpeg, QuickTime, rtf, etc.

### **Java** - choice of JVMs:

- external JVM 1.1.8, via Java Plug-in
- internal Netscape JVM "1.1"
  - LiveConnect
  - Netscape security model (signed applets, etc.)




# Additions

Enhancements beyond "standard" Netscape

- **Improved Netscape JVM**
  - ▶ Euro currency support added, JVM tuned for thin client environment
- **Select your JVM with Java Plugin**
  - ▶ Netscape JVM gives access to: IIOP, IFC, LDAP, JSD
  - ▶ IBM JVM gives access to: JFC, javax.comm
- **Apply the "Switch" globally**
  - ▶ Select IBM JVM without HTML changes using the Plugin Switch
- **General Application launcher**
  - ▶ Browser can now launch *any* local program, including 5250 and ICA
    - Normally only allows 3270, Telnet, e-mail, news, Java applets to launch
  - ▶ Allows you to use the browser as a desktop ... or "webtop"
- **PDF viewer and RealPlayer 5.0**
  - ▶ installed and preconfigured ... "ready to run"
- **Advanced configuration**
  - ▶ Can be done without having to purchase Netscape Mission Control
    - Netscape.cfg is not encrypted, override files for customization
    - Create kiosks, specialized browser configurations beyond what NSM allows

## Differences from other Netscape distributions

- 
- **Netscape Composer not included**
    - ▶ Only needed for creating HTML docs- not a normal task on a thin client
  - **AOL Instant Messenger not included**
    - ▶ It's a marketing "add-on" that's not really part of Communicator
  - **No JITC for internal JVM**
    - ▶ Makes little difference, in most cases
    - ▶ Customer should use the external JVM for any compute-intensive applets
  - **No SmartUpdate**
    - ▶ Not applicable; can't download/update our product at Netscape's site
  - **Downloading of Plug-ins and Helper Apps**
    - ▶ Technically possible, but NOT supported...
      - Plugins are platform-specific; if attempted use NetBSD, or maybe Linux
  - **Postscript printing only**
    - ▶ You can use a server-based print converter to print on other types
  - **Customization scheme is different from V1R3**
    - ▶ manual configurations by editing pref.dft file will not work, not migrated
    - ▶ New mechanism using JavaScript, now documented by Netscape
    - ▶ <http://developer.netscape.com/docs/manuals/deploymt/jsprefs.htm>



# *Specific differences with Windows Netscape*

## ■ Features

- ▶ Set of plugins available is smaller
  - Shockwave Flash (\*.swf) not supported
  - Real G2 Plugins not supported (\*.rpm, \*.ssm, \*.vnd - x-pn-realaudio)

## ■ Unix Behavior

- ▶ Location Field Name completion not supported
- ▶ Some Internet Keywords may not be supported
  - although some are
- ▶ Tabbing through long form does not auto-advance the page
  - must page down to access
- ▶ No Increase Font/Decrease Font View Menu Items
  - user must change size in  
Edit->Preferences->Appearance->Fonts
- ▶ Shortcuts are different





## Configuration in V2R1

Netscape can be configured via:

- NSM
- netscape.cfg
- remote "auto-config"
- overrides.js

netscape.cfg is not encrypted

MCD may be used, but save as \*.jsc

<http://developer.netscape.com/docs/manuals/deploymt/jsprefs.htm>

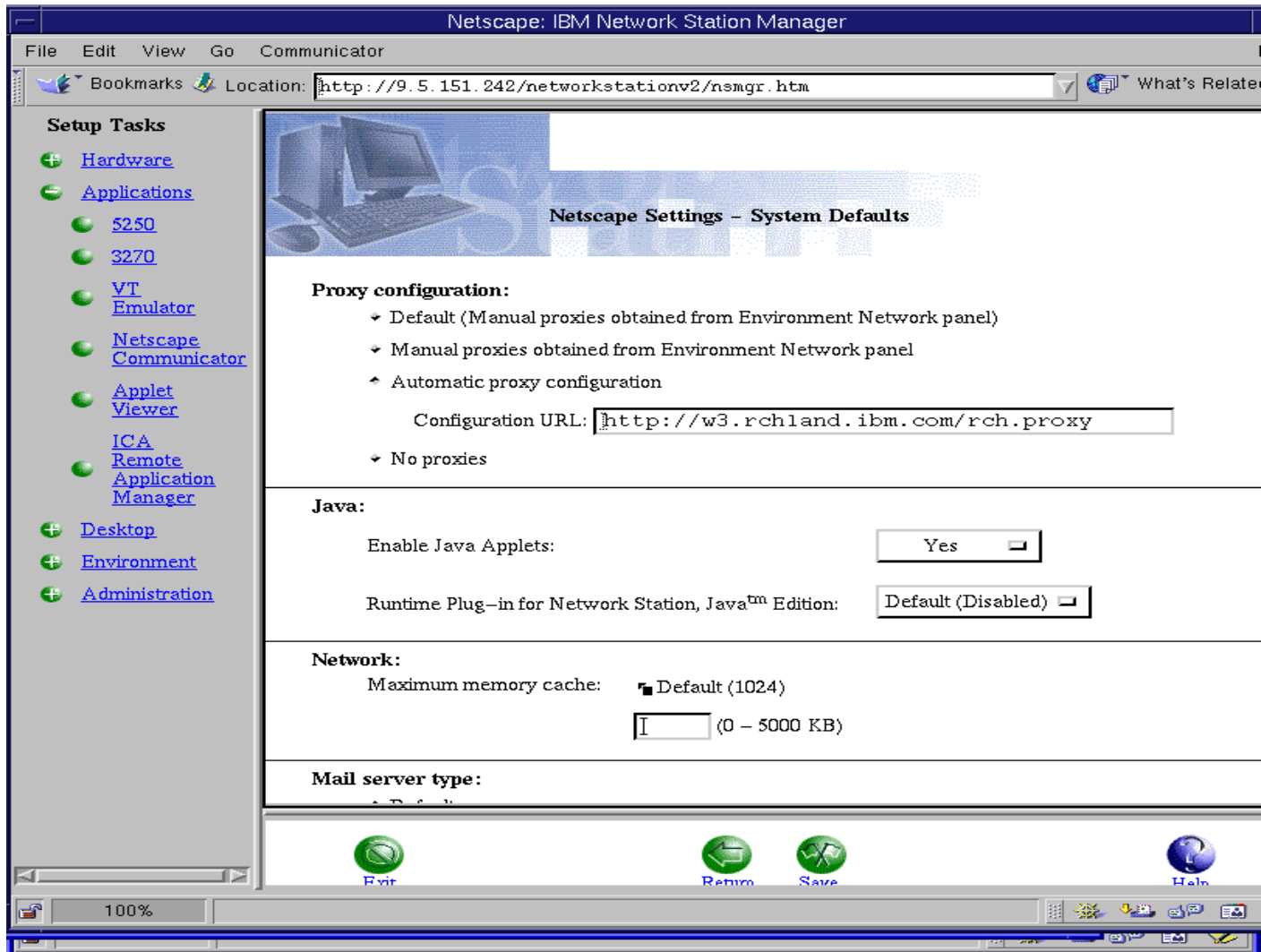
auto-config set in netscape.cfg

same format as netscape.cfg above

```
prefs - config("autoadmin.global_config_url", <URL>);  
      - config("autoadmin.refresh_interval", <time_sec>);
```

overrides.js - the customer configurable file

# Configuration with NSM



The screenshot displays the Netscape IBM Network Station Manager configuration interface. The window title is "Netscape: IBM Network Station Manager". The address bar shows the URL "http://9.5.151.242/networkstationv2/nsmgr.htm". The left sidebar contains a "Setup Tasks" menu with categories: Hardware, Applications, Desktop, Environment, and Administration. Under "Applications", several items are listed with expand/collapse icons: 5250, 3270, VT Emulator, Netscape Communicator, Applet Viewer, ICA Remote Application Manager, and Desktop. The main content area is titled "Netscape Settings - System Defaults" and is divided into sections:

- Proxy configuration:**
  - Default (Manual proxies obtained from Environment Network panel)
  - Manual proxies obtained from Environment Network panel
  - Automatic proxy configuration
    - Configuration URL:
  - No proxies
- Java:**
  - Enable Java Applets:
  - Runtime Plug-in for Network Station, Java™ Edition:
- Network:**
  - Maximum memory cache:  Default (1024)
  - (0 - 5000 KB)
- Mail server type:**

At the bottom of the configuration area, there are three buttons: "Exit", "Return", and "Save". The status bar at the bottom shows a zoom level of 100% and a taskbar with various system icons.

# Configuration with NSM2

**Setup Tasks**

- Hardware
- Applications
  - 5250
  - 3270
  - VT Emulator
  - Netscape Communicator
  - Applet Viewer
  - ICA Remote Application Manager
- Desktop
- Environment
- Administration

**Mail server type:**

- Default
- POP3
- IMAP4
  - IMAP4 directory:

**Netscape Java Classpath options:**

Netscape  
Java  
Classpath:

- Internet Foundation Classes
- IIOP
- JavaScript Debugger
- LDAP

User classpath:

Verbose mode (receive a message when Java loads class)

Verify classes:

**Garbage collection:**

- Verbose
- Only When Needed

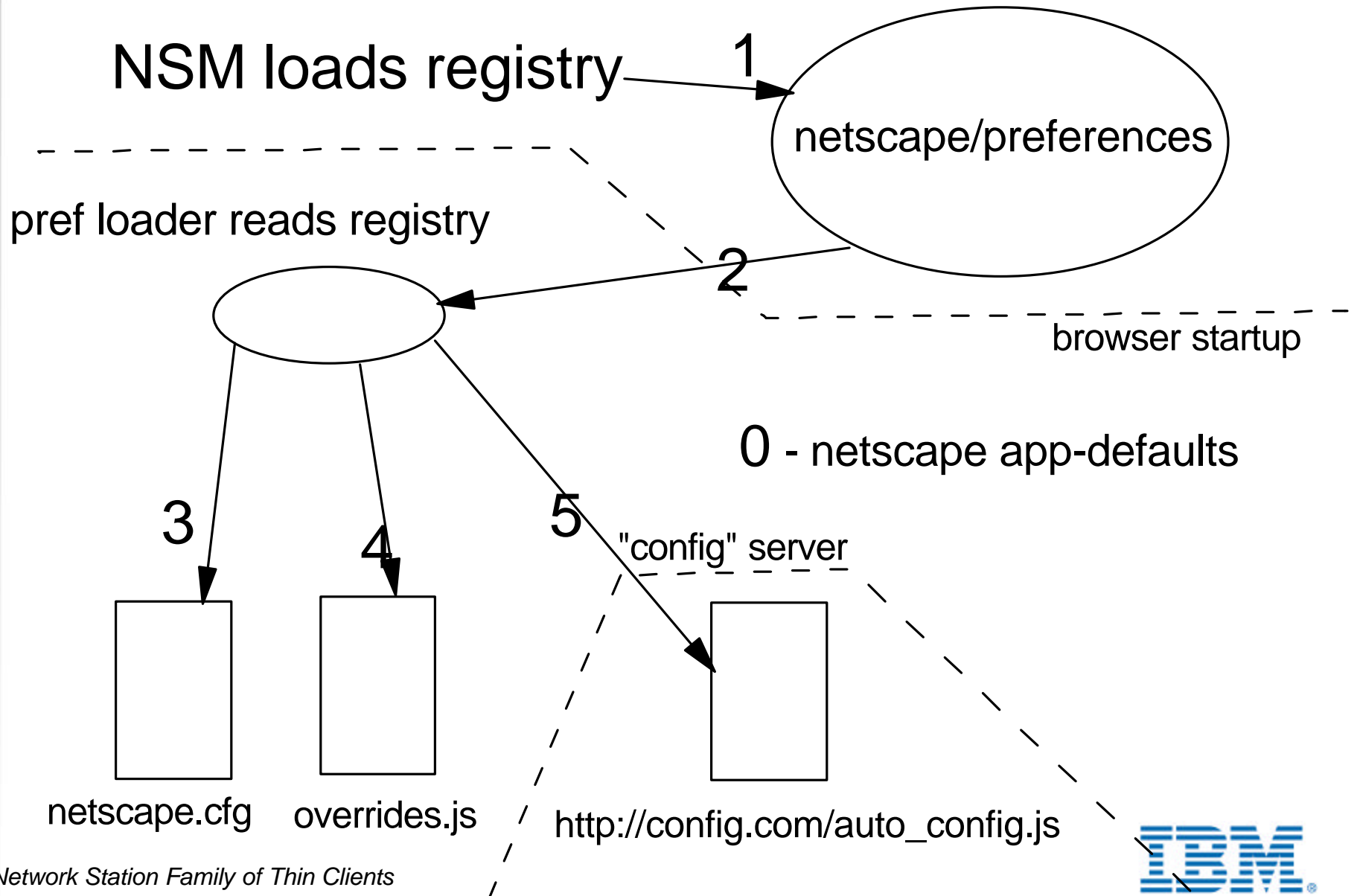
**Memory settings:**

Maximum heap size:   (128 KB or greater)

Java stack size:   (10 KB or greater)

[Exit](#) [Return](#) [Save](#) [Help](#)

# Configuration hierarchy





# Configuration Syntax Summary

- **config files may contain javascript functions/statements**
- **Verbs**
  - ▶ **config("name","value")** - locked by default, not user accessible
  - ▶ **defaultPref("name","value")** - set the value but do not lock from user
  - ▶ **lockPref("name","value")** - set the value and lock the preference
  - ▶ **unlockPref("name")** - release the lock
  - ▶ **getPref("name")** - get the value for the preference
- **values**
  - ▶ **only string values must be quoted**
  - ▶ **prefs using the config() verb are Enterprise Customization class**
    - **autoadmin.\***, **roaming access - li.\***, **toolbar**, **startup URL**



## Install & NLVs

- Two versions of Netscape available
  - ▶ netscape-export - 40 bit in Product C08
  - ▶ netscape-us - 128 bit in Product C07
  - ▶ /usr/local/netscape/netscape symbolically linked to 'proper' version
  - ▶ no 'coexistence' of 128 and 40 bit products as "netscape"
  - ▶ can be "manually" set on server if desired along with user application on desktop
- NLVs
  - ▶ Info messages - about, plugins, splash in /usr/X11R6/lib/X11/<lo\_RE>/netscape/
  - ▶ Netscape 'ad' file in /usr/X11R6/lib/X11/<lo\_RE>/app-defaults/
  - ▶ Bookmark & Nethelp files containing MRI are linked at install
    - ONLY the Servers' primarily locale available for NetHelp and bookmarks
- /usr/local/bin/run\_netscape
  - ▶ 'shell' program to ensure only 1 copy of Netscape is running



## Migration from V1R3 to V2R1

- Configuration will NOT be migrated
  - ▶ Configuration mechanisms are NOT compatible between Nav3 and Nav4
- Directory buttons will NOT be migrated - no equivalent
- mail will be migrated
  - ▶ from <userid>/nav/mail/\* (V1R3) to <userid>/nsmail/\*
- cookies will be migrated
  - ▶ from <userid>/nav/cookies (V1R3) to <userid>/netscape/cookies
- User must EXPLICITLY import
  - ▶ bookmark.html (V1R3) which is moved to v1r3\_bm.html
  - ▶ address\_book.html (V1R3) which is moved to v1r3\_ab.html



# Plug-Ins and Helper Apps

New support should satisfy most customers

## Player

## Function

## Considerations

### PDF Viewer

Ported from xPDF helper app

Equivalent to Adobe Acrobat 3.0 PDF version 1.2

A clone of Adobe Acrobat  
Down level:

Adobe has released Acrobat 4.0, supporting PDF version 1.3  
Replace with Linux version of Adobe product if necessary (manual steps)

### RealPlayer 5.0 (R5)

Ported from RealNetworks helper app

Plays streaming audio and video

Down level:

current product is RealPlayer G2  
Not available on PowerPC machines  
No plug-in version

### NC Player

Ported from XAnim helper app

Somewhat equivalent to Apple QuickTime 2

A clone of Apple QuickTime

Down level:

Plays a wide variety of non-streaming audio and video (au, wav, aiff, QuickTime, etc.)

current QuickTime is version 4  
Should be OK in most cases

### Java Plug-In 1.1

Ported from Sun plug-in

Allows Java applets to be executed by external JVM instead of internal

No LiveConnect

No Netscape security model

(Netscape Certificate Mgmt & Loader policy)






# General Application Loading

- **Select set of preconfigured applications**
  - ▶ emulators - X-5250://%h , X-3270://%h, X-nsterm://%h
  - ▶ ICA - X-ICA://%h?<opt>, X-ICAMgr://%h?<opt>
  - ▶ java - X-java, X-appletviewer
- **Adding new applications in overrides.js**
  - ▶ lockPref( "applications.X-<appid>", "/usr/bin/<cmd> %h %o");
  - ▶ lockPref( "applications.X-<appid>.active", "true");
  - ▶ enable other apps predefined in netscape.cfg by making active in overrides.js
- **String parameters to Command**
  - ▶ %o options
  - ▶ %p port
  - ▶ %h host
  - ▶ %u username
- **for examples take a look at netscape.cfg**

# Helper app/plug-in setup

- 
- **add prefs in overrides.js**
    - ▶ **mime.%s.mimetype** - String following "Mime Type"
    - ▶ **mime.%s.extension** - File extensions supporting; ex. jpg, jpeg
    - ▶ **mime.%s.load\_action** - action to take with specified MIME type
      - 1 - ask the user where to save the file
      - 2 - launch the application associated w/ MIME type (default)
      - 3 - ask the user what action to take
      - 4 - handle the MIME type as a plug-in
    - ▶ **mime.%s.x\_appname** - Command to execute
  - **create a JavaScript function to handle multiple MIME types**
    - ▶ check `netscape.cfg` for an example
  - **Java applications may be used as the Command to execute**
    - ▶ allows extensibility w/o a platform specific development environment



# Java Considerations

- **Netscape JVM has been improved**
  - ▶ reduced real memory utilization
  - ▶ performance improvements
  - ▶ better scalable font support
  - ▶ euro support
- **expanding heap used by Netscape JVM**
- **enabling RMI callbacks**
  - ▶ set pref (netscape.security.PriviledgeManager.enablePrivilege, "UniversalConnect")
- **prefs for signed.applets.\***
  - ▶ local\_classes\_have\_30\_powers- simulate Netscape 3.2 security model
  - ▶ low\_security\_for\_local\_classes - simulate Netscape 3.2 security model
  - ▶ simulate\_signatures\_on\_system\_classes - bypasses sig check
  - ▶ verbose\_security\_exceptions - added info on security exceptions



# Debugging Java and Using the Console

- **Start Netscape from Advanced Diagnostic window to avoid run\_netscape for debugging**
  - ▶ args to Netscape JVM in \$NETSCAPE\_JAVA\_ARGS
- **If started from the command line, use**
  - ▶ -java\_args to specify arguments such as -verbose, -verbosegc to the JVM
- **Java Debug Console - Communicator->Tools->Java Console**
  - ▶ **d** dump applet context state to window
  - ▶ **f** finalize objects on finalization queue
  - ▶ **g** garbage collect
  - ▶ **h,?** help message
  - ▶ **m** print current memory use to console
  - ▶ **s** dump memory summary to file "memory.out"
  - ▶ **t** dump thread info to file "memory.out"
  - ▶ **x** dump memory to file "memory.out"
  - ▶ **X** dump detailed memory to file "memory.out"
  - ▶ **0-9** set applet debug level



## *Where are the jar files?*

### Accessing classes with the <ARCHIVE> tag

- **ClassLoader Security bypassed when on CLASSPATH**
  - ▶ security exceptions may occur if accessed via AppletClassLoader
- **However, should be FASTER**
- **/usr/local/netscape/java/classes/\***
  - ▶ **iiop10.jar -**
  - ▶ **ifc11.jar**
  - ▶ **jsd10.jar**
  - ▶ **ldap10.jar**
- **/usr/local/java/J118/classes/lib/\***
  - ▶ **jmf.jar**
  - ▶ **swingall.jar**
  - ▶ **javaxcomm.zip**
- **So, putting it together, running in the Netscape JVM**
  - ▶ **<APPLET archive="/usrlocal/java/J118/classes/lib/swingall.jar" code="myClassUsingSwing.class" width=288 height=288 </APPLET>**



# JavaScript Considerations

- **Debug specific statements with the javascript: location**
- **Setting up the JavaScript console**
  - ▶ **In the users' prefs.js add:**
    - `user_pref("javascript.console.open_on_error", true)`
    - turn off with - `user_pref("javascript.classic.error_alerts", true)`
- **JavaScript debugger under <http://developer.netscape.com>**
  - ▶ **online manual**
    - `/docs/manuals/jsdebug/index.htm`
  - ▶ **download**
    - `/software/tools/index.html?content=/software/jsdebug.html`
- **May be related to JavaScript level**
  - ▶ **can test whether the code is ECMA compliant by selecting JavaScript 1.2**
    - `<SCRIPT language="JavaScript1.2">`
  - ▶ **ex. (a=b) now assignment rather than equivalency**



## *Useful URLs*

- <http://devedge.netscape.com> - Netscape's Developer Site
- under <http://developer.netscape.com>
  - ▶ </tech/javascript/index.html>
    - Netscape's JavaScript Developer Central
  - ▶ </docs/manuals/javascript.html>
  - ▶ </docs/manuals/communicator/jsref/js13.html>
    - JavaScript 1.3 & ECMA detail
  - ▶ </docs/manuals/ifc/>
    - Internet Foundation Classes (IFC)
  - ▶ [/docs/manuals/dirifc/API\\_users\\_guide.html](/docs/manuals/dirifc/API_users_guide.html)
    - LDAP 1.0 Users Guide
  - ▶ </tech/corba/>
    - CORBA/IIOP Developer Central
- <http://home.netscape.com/eng/mozilla/4.5/relnotes/windows-4.5.html>
  - ▶ 4.51 Release Notes (replace 4.6 for 4.5 in URL for 4.61 Rel. Notes)
- <http://www.javascript.com>